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- (71) Applicant (*for all designated States except US*): **CIBA SPECIALTY CHEMICALS HOLDING INC. [CH/CH]; Klybeckstrasse 141, CH-4057 Basel (CH).**
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BÄBLER, Fridolin [CH/US]; 509 Stenning Drive, Hockessin, DE 19707 (US). MERSTETTER, Hans, Rudolf [DE/US]; 3 Spring Lane, Chadds Ford, PA 19317 (US).**
- (74) Common Representative: **CIBA SPECIALTY CHEMICALS HOLDING INC.; Patentabteilung, Klybeckstrasse 141, CH-4057 Basel (CH).**
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(54) Title: **OXIDATION PROCESS FOR PREPARING QUINACRIDONE PIGMENTS**

(57) Abstract: The present invention relates to a process of preparing quinacridone by oxidizing a 6,13-dihydroquinacridone salt corresponding to the quinacridone pigment with hydrogen peroxide as the oxidizing agent in the presence of 2,7-anthraquinone disulfonic acid as catalyst. The inventive process is economical and environmentally friendly and yields high performance quinacridone pigments in a high yield.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 840 901 A (BAEBLER FRIDOLIN) 24 November 1998 (1998-11-24) cited in the application column 1, line 53 – line 57 column 3, line 50 – line 67 claims 1,4,14; examples —	1-16
A	EP 0 894 832 A (CIBA GEIGY AG) 3 February 1999 (1999-02-03) claims —	1-16
A	EP 0 806 456 A (CIBA GEIGY AG) 12 November 1997 (1997-11-12) claims; examples —	1-16

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Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ketterer, M

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 225 472 B1 (B AUML BLER FRIDOLIN) 1 May 2001 (2001-05-01) cited in the application examples 8,10-13 ----	1-16
A	US 6 264 733 B1 (B AUML BLER FRIDOLIN) 24 July 2001 (2001-07-24) cited in the application examples ----	1-16
A	EP 0 697 413 A (CIBA GEIGY AG) 21 February 1996 (1996-02-21) examples -----	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/07337

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
US 5840901	A 24-11-1998		BR 9704376 A CN 1176978 A ,B CZ 9702593 A3 DE 69706621 D1 DE 69706621 T2 EP 0829523 A2 JP 11043620 A TW 444048 B	15-06-1999 25-03-1998 18-03-1998 18-10-2001 04-07-2002 18-03-1998 16-02-1999 01-07-2001
EP 0894832	A 03-02-1999		BR 9802832 A CN 1207402 A ,B CZ 9802408 A3 DE 69801302 D1 DE 69801302 T2 EP 0894832 A2 JP 11100522 A TW 523530 B US 6013127 A	09-05-2000 10-02-1999 17-03-1999 13-09-2001 14-03-2002 03-02-1999 13-04-1999 11-03-2003 11-01-2000
EP 0806456	A 12-11-1997		DE 69705770 D1 DE 69705770 T2 EP 0806456 A2 JP 10053712 A US 5856488 A	30-08-2001 23-05-2002 12-11-1997 24-02-1998 05-01-1999
US 6225472	B1 01-05-2001		US 2001016655 A1 CN 1265404 A EP 1026207 A2 JP 2000226530 A KR 2000057856 A	23-08-2001 06-09-2000 09-08-2000 15-08-2000 25-09-2000
US 6264733	B1 24-07-2001		US 2001022150 A1 CN 1265404 A EP 1026207 A2 JP 2000226530 A KR 2000057856 A	20-09-2001 06-09-2000 09-08-2000 15-08-2000 25-09-2000
EP 0697413	A 21-02-1996		US 5502192 A BR 9503565 A CA 2155499 A1 DE 69502148 D1 DE 69502148 T2 EP 0697413 A2 ES 2116706 T3 JP 8060009 A	26-03-1996 04-06-1996 09-02-1996 28-05-1998 22-10-1998 21-02-1996 16-07-1998 05-03-1996